BDAC ECOSYSTEM RESTORATION WORK GROUP
Meeting Summary
August 28, 1996

The fifth meeting of the BDAC Ecosystem Restoration Work Group was held on Wednesday, August 28, 1996 at the Resources Building from 9:00 a.m. to 12:00 p.m. In attendance were (besides thirty individuals representing the general public and stakeholders):

BDAC members of the Work Group

Stu Pyle
Pat McCarty

Invited participants

Nat Bingham
Gary Bobker
Pete Chadwick
Steve Ford
Cindy Darling
Susan Hatfield
Pete Rhoads
Frank Wernette
Tom Zuckerman

Special Speakers

Don Ermine - Sierra Nevada Ecosystem Project
Dave Wegner - Glen Canyon Project Ecosystem Manager

CALFED Staff

Dick Daniel
Lester Snow
Sharon Gross

Other Participants

Adrienne Alvord
Michael B. Jackson
Marco Bell
Glen Birdzell
Tom Cannon
Steve Chainey
Tracy Clay
John Coburn
Gilbert Cosio
Bill DuBois
David Forkel
Kathy Freas
Dan Fults
Bill Gaines
Stan Griffan
Steve Hirsch
Katy Hopkins
Steve Kellogg
John Kopchik
Walter Kornichuk
Marnie Kragan
Jeff Phipps
Rich Reiner
Brad Shinn
Heather McIntire
John Mills
Kent Nelson
Jason Peltier
Philip Unger
Greg Wang
Scott Wilcox
Michelle Wong

E-013467

Stu Pyle introduced the meeting and presented the agenda. Dick Daniel stated that the focus of the meeting would be on adaptive management. He summarized aspects of the revised draft of the Adaptive Management Paper and introduced invited guests who would describe case studies of adaptive management. The adaptive management paper was offered as a draft to stimulate discussion.

Lester Snow spoke on the Ecosystem Restoration Program, emphasizing the complexity of the ecosystem and the problems. He stated the key objective is to provide a healthy ecosystem, but because of the complexity, there is a need for an adaptive management program wherein the exact mix of actions and implementation levels may not be completed for 20-25 years. Adaptive management consists of setting reasonable targets and providing assurances that you have the resources to get you there. Adaptive management provides the means to obtain agreement on what is known, identifies where there is disagreement, identifies specific actions, and provides for tests of the different hypotheses. CALFED's overall objective is to establish rational, effective targets and an adaptive management process.

In response to questions on the process, Lester Snow stated that a long-term vision would have basic goals/targets and the short-term vision would be more specific. He further reiterated that the approach to target setting would move us from the base case to a healthy ecosystem.

Sierra Nevada Ecosystem Project - D. Ermine

Don Ermine provided an overview of the Sierra Nevada Ecosystem Project (SNEP). He emphasized the importance of considering the human component of the ecosystem and the potential of effects outside the boundary of the project. In speaking on adaptive management, he further emphasized the need to consider the social component and the interaction of the stakeholders as part of the process of adaptive management. He also related a list of lessons learned from SNEP:

- No single institution has the ability to manage and monitor a large ecosystem restoration program.
- It is important to involve stakeholders in process.
- Those who want to participate and are not asked can become a management problem.
- It is important to quickly bring in people who are solution oriented.
- Should be an open process with no hidden agendas.
- All management activities are experiments.
- There is currently not enough emphasis on planning and measuring.
- Important to lay out adaptive management process up front.
- Important to spell out how to measure success.
- Need to model the "what ifs" on uncertainty.
- Quickly ran out of data and modeling tools, and were only able to model what they

had data for. Wanted to model more but could not due to lack of data.

- They were long on ecosystem structure and short on function. Limited information on functions.
- SNEP is not a plan, but a set of assessment strategies.

He also listed some lessons from the Great Lakes Ecosystem Study:

- Restoration programs need to identify goals and objectives.
- The need to focus on important questions.
- The need for a vision on where the program is going.
- Recognition that it is difficult to return to historical levels because the system has permanently changed and there should be freedom from the legacy of the past; but also recognition that this does not reduce the obligation to provide improvement.
- Set new goals that are flexible.

Don was asked if there would be a Sierra restoration program and indicated he didn't know. The plan will go to Congress with the hope of implementing some aspects of it. With centralized management they could move toward a restoration program like CALFED's.

When asked about the need to involve the public, Don responded that there was a need to engage local groups in public forums and to capture collaboration and energy of the public regardless of the topic. He also stated the need to look toward collaboration among the landowners and the importance of ensuring them that the program would not be taking their land without compensation. Restoration should involve creative solutions using such actions as tax incentives, easements, and other incentive processes.

In response to questions about the ecosystem approach, Don stated the importance in dealing with functional landscape units for watersheds and the aquatic habitats. Watersheds are in poor shape and are getting worse, and need much attention. We can't take the standard approach of saving what little is left; instead we must restore ecosystems, because each component has important value. There is a need to recognize limited opportunities and focus on improving watershed conditions and reducing stressors such as logging roads. Need to pick actions that provide the biggest bang for the buck.

In response to questions about lack of consensus, Don stated that these should not be a problem, as adaptive management allows you to focus monitoring and research, as well as restoration actions on soft spots. Recognize that you may go in wrong direction for a while, but that you will eventually adjust your course. Provide for minority opinions and don't be afraid of them. Most people will accept some progress or direction toward their position.

When asked about goal setting, Don stated that the public has some responsibility

for setting targets. The process of restoration has to come out of the messiness of democracy. The restoration program should keep track of where things stand at any one time. The "desired future conditions" should involve the public. Don referred to Steven Gould statements about how we are good at diagnosing problems but are often not capable of predicting outcomes. We need to recognize that ecosystems are too complex to understand, because interactions are too important and that we need to operate as best we can.

In response to a question on to what extent can we rely on adaptive management, Don stated that it is impossible to predict or measure responses, for example consider our ability to measure El Nino effects. We need only to measure a suite of indicators that we think reflect our goals. We should accept predictions that have a wide range. We should consider the experience of modern medicine that has achieved great success from trial and error, by trying out treatments and expanding trials as success is viewed.

When asked about human effects, Don responded that it is important to identify who will be affected, what activities will affect communities, and that there are scientists capable of studying the human factor.

Glen Canyon Environmental Studies - Dave Wegner

This study focused on effects of dams and restoration of the Colorado River below Glen Canyon Dam. Of the 43 dams built on the Colorado River, only one has received any NEPA evaluation. Specifically his program evolved out of the federal action to add generating capacity to the Glen Canyon Dam. Their experience with adaptive management was summarized as follows:

- there is no one right answer to everything
- the system changes every year and has a new set of parameters
- success comes from communication
- the process is painful - there is no easy way to communicate and be a party to decision making
- short term targets are important
- adaptive management is not a panacea, it is just another tool
- adaptive management should be spelled out in the solution strategy
- there is a need for a flexible process
- there is a need to look for opportunities
- restoration plan is only a roadmap, with clearly defined steps and forks in the road along the way
- there is a need for consistent objectives.
- there is a need to consider legal mandates such as ESA and water rights, as well as ecological mandates, and system mandates
- there is a need to separate impacts of structures from operations

Dave related the mandate to manage the system on an ecosystem basis. Their program focused on the following ecosystem functions: sediment trapping, water temperature, exotic species, nutrient dynamics, salinity, metals in sediments, and flow regime.

Dave related some important challenges:

- balancing the whole system approach with species approach
- providing information that is useful to adaptive management
- focusing on social and administrative needs as well as ecological
- how to measure success through the design of hypotheses testing program

Their program is a series of experiments - including this year's test flow pulse that moved sediment in the Grand Canyon. The test had a cost of one million dollars in lost power revenue, and will need to be repeated every 8 to 10 years.

Dave related some new aspects of their program:

- They have a new science advisory group.
- They have instituted peer review with the National Academy of Science and have an independent peer review team.
- Though their focus is on flow, they have other actions including exotic species management and fisheries management. They are also looking at engineering solutions to the water temperature and sediment problems. They are also working on peaking power related problems.

Adaptive Management Paper

Dick Daniel summarized the changes that have been made to the adaptive management paper in response to comments received from the Work Group.

Setting Targets for Ecosystem Restoration Program

Dick Daniel summarized our approach to setting targets as discussed at the last meeting. He related the formation of an aquatic and a terrestrial team to put together targets and the development of an ecosystem restoration program plan by mid November. There will be a public workshop on targets near the end of October. Initial activities include evaluating targets and goals in existing plans. He suggested that there is no one route to setting targets.

Ecosystem Restoration Component Planning

Frank Wernette summarized efforts being initiated to develop the plan. Several tasks as part of this effort include identifying key resources, setting targets, and developing visions.

Public Comment

SNEP scientists are available to help CALFED deal with upper watersheds and helping to transfer elements of the planning process.

Next Meeting

Planned for September 24th - 9 to 12.